

What is claimed is:

1. A biliary catheter for use in biliary procedures, comprising:

a first elongate member having an outer surface, a proximal end and a distal end;

a guidewire lumen carried by the first elongate member extending from a location proximal the distal end of the first elongate member to a location proximate the distal end of the first elongate member;

a channel allowing access to the guidewire lumen from the exterior of the catheter and extending longitudinally along the outer surface, the channel defining a first and a second edge surface; and

a second elongate member, having a proximal end and a distal end, including a tubular shaft and defining a lumen therethrough, the second elongate member being disposed within the guidewire lumen and extending longitudinally therein, and having an opening at its proximal end and at its distal end.

2. The biliary catheter of claim 1, wherein the guidewire lumen has a cross-sectional profile; and

the second elongate member includes an outer portion, such that the second elongate member has a cross-sectional profile which mates with the cross-sectional profile of the guidewire lumen.

3. The biliary catheter of claim 2, wherein the second elongate member additionally includes a substantially semi-circularly shaped outer portion, the outer portion comprised of an upper surface and a first and a second side surface, such that the first and

second side surfaces of the outer portion engage the first and second edge surfaces respectively.

4. The biliary catheter of claim 1, wherein the second elongate member is removable from the guidewire lumen through the channel.

5. The biliary catheter of claim 1, wherein the second elongate member extends distally from the distal end of the first elongate member.

6. The biliary catheter of claim 1, wherein the second elongate member additionally includes a flared proximal end such that the diameter of the lumen therein is larger at the proximal end of the second elongate member than at a point distal the proximal end.

7. The biliary catheter of claim 1, wherein the inner diameter of the second elongate member is between 0.014 inches and 0.025 inches, and the diameter of the guidewire lumen is between 0.012 inches and 0.028 inches.

8. The biliary catheter of claim 1, wherein the outer diameter of the second elongate member is between 0.025 inches and 0.040 inches.

9. A biliary system comprising:  
a biliary catheter comprising a first elongate member having an outer surface, a proximal

end and a distal end, a guidewire lumen carried by the first elongate member extending from a location proximal the distal end of the first elongate member to a location proximate the distal end of the first elongate member, a channel allowing access to the guidewire lumen from the exterior of the catheter and extending longitudinally along the outer surface, the channel defining a first and a second edge surface, a first opening being located adjacent to the proximal end of the channel;

a second elongate member, having a proximal end and a distal end, including a tubular shaft and defining a lumen therethrough, the second elongate member being disposed within the guidewire lumen and extending longitudinally therein, and having an opening at its proximal end and at its distal end; and

a guidewire being disposed through the first opening and into the guidewire lumen.

10. A method of using a biliary catheter comprising the steps of:

providing a catheter comprising a first elongate member having a proximal end and a distal end, a guidewire lumen carried by the first elongate member extending from a location proximal the distal end of the elongate member to a location proximate the distal end of the member, the first elongate member including a channel extending longitudinally along the first elongate member, and allowing access from the exterior of the catheter into the guidewire lumen, and defining a first and a second edge surface longitudinally along the length of the channel;

providing a second elongate member comprising a tubular shaft having a proximal end and a distal end, including an opening at both the proximal end and the distal end and defining a lumen therethrough;

inserting the second elongate member through the channel and into the guidewire lumen of the first elongate member; and

advancing the second elongate member longitudinally therein.

11. The method of claim 10, wherein the first elongate member includes a cross-sectional profile, and the second elongate member includes an orientation with respect to the first elongate member, the second elongate member comprising a tubular member, such that the second elongate member possesses a cross-sectional profile which mates with the cross-sectional profile of the first elongate member, the method further comprising the step of:

mating the first elongate member with the second elongate member.

12. The method of claim 11, wherein the second elongate member comprises a tubular member integral with a substantially semi-circularly shaped outer portion, the outer portion comprised of an upper surface and a first and a second side surface, the method further comprising the step of:

adjusting the orientation of the second elongate member until the first and second side surfaces of the outer portion engage the first and second edge surfaces respectively of the first elongate member.

13. The method of claim 10, additionally comprising the steps of:

inserting a guidewire into the lumen of the second elongate member and extending it longitudinally therethrough; and

advancing the catheter over the guidewire, wherein a proximal end of the guidewire

extends from a proximal region of the first elongate member, and a distal end of the guidewire extends distally from the first elongate member.

14. The method of claim 13, additionally comprising the steps of:

retracting the guidewire from the second elongate member;

removing the second elongate member from the guidewire lumen of the first elongate member; and

inserting a second guidewire into the guidewire lumen of the first elongate member and advancing it therethrough, wherein a proximal end of the second guidewire extends from a proximal region of the first elongate member, and a distal end of the guidewire extends distally from the first elongate member.

15. The method of claim 14, additionally comprising the step of selecting the diameters of the guidewires such that the diameter of the second guidewire is greater than the diameter of the first guidewire.

16. The method of claim 14, additionally comprising the step of selecting the diameters of the guidewires such that the diameter of the second guidewire is less than the diameter of the first guidewire.

17. The method of claim 10, wherein the distal end of the second elongate member is advanced beyond the distal end of the first elongate member.

18. A catheter for use in biliary procedures including a shaft having a proximal end and a distal end, the improvement comprising:

a guidewire lumen carried by the shaft extending from a location proximal the distal end of the shaft to a location proximate the distal end of the shaft;

an opening through the wall of the catheter shaft into the guidewire lumen located proximal the distal end of the shaft; and

a channel providing access to the guide wire lumen extending longitudinally from the opening to the distal end of the shaft.

19. The catheter of claim 18, wherein a proximal portion of the channel includes a C-shaped cross-sectional profile, and a distal portion of the channel includes a U-shaped cross-sectional profile.

20. The catheter of claim 18, wherein a proximal portion of the channel includes a U-shaped cross-sectional profile, and a distal portion of the channel includes a C-shaped cross-sectional profile.